

***Official copies of these procedures are maintained at this website.  
Before using a printed copy, verify that it is the most current  
version by checking the document issue date on this website. Signed  
copies of these official procedures are maintained at the Training Office.***

## C-A OPERATIONS PROCEDURES MANUAL

### 8.12.3 Introduction Of Hazardous Gas Into The Experimental Area

Text pages 2 through 7

Attachment

#### Hand Processed Changes

<u>HPC No.</u>	<u>Date</u>	<u>Page Nos.</u>	<u>Initials</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Approved: \_\_\_\_\_ [Signature On File](#) \_\_\_\_\_  
Collider-Accelerator Department Chairman      Date

F. Kobasuik

### **8.12.3 Introduction of Hazardous Gas into the Experimental Area**

#### **1. Purpose**

- 1.1 To provide operating instructions, to the Collider-Accelerator Support (CAS) Watch, for controlling the start-up and initial filling of hazardous gas devices in the C-A Experimental Area of Building 912.
- 1.2 To provide guideline for the completion of Part B of the CAS Maintenance and Safety Check-List for Apparatus Employing Hazardous Gas.
- 1.3 To provide for the notification of Operations Coordinators (OC) and others whose routine may be impacted by the operation of the device.

#### **2. Responsibilities**

- 2.1 The CAS Beam Service Group Supervisor is responsible for completing Part A (maintenance prior to operation) of the CAS Maintenance and Safety-Check-List for Apparatus Employing Hazardous Gas.
- 2.2 The CAS Watch Supervisor is responsible for reviewing Part A and completing Part B (permission to fill) of the check-list.

#### **3. Prerequisites**

- 3.1 Qualified and trained CAS Watch Supervisor.

#### **4. Precautions**

- 4.1 A new check-off shall be issued each time that a hazardous gas device is initially filled or following the completion of Part C of an existing check-list.
  - 4.1.1 ex: A filled device is secure from operation for a week to allow for repairs. Part C of the existing check-off must be completed and a new check-list issued before refilling.

#### **5. Procedure**

- 5.1 The CAS Watch Supervisor completes Part B of the check-list by satisfying the requirements of the Part B Notes.
  - 5.1.1 Review part A (maintenance) of the check-list for completeness.

- 5.1.2 Verify with the CAS Technical Groups supervisor that the East Area Hold Point #1 is in "Affect" and inform him of the imminent filling of the hazardous gas device.
- 5.1.3 Unlock the special monitor systems for the Fire Wire and Evacuate circuits at the ECR and MCR.
- 5.1.4 Inform the Rigging Supervisor of the hazardous gas device location.
- 5.1.5 Check the status of the respective building crane and inform the rigging crew Lead-Man of the new restriction for crane operation.
- 5.1.6 Inform (directly) the C-A OC/or designee, of the imminent filling of the hazardous gas device.
- 5.2 The Beam Line Liaison Engineer signs for approval to fill.
- 5.3 The CAS Watch Supervisor signs for permission to fill.
  - 5.3.1 Inform the Hazardous Gas System Operator they have permission to fill the device.
    - 5.3.1.1 When applicable, the Hazardous Gas System Operator signs "Device Purged" documenting that the High Pressure Vent System has been purged.
  - 5.3.2 Record and pass-on an entry in the CAS Watch Log to the next shift to allow the new location of hazardous gas to be included into the "Log Heading".
  - 5.3.3 Update the Hazardous Gas Location Maps at the Main Control Room (MCR), Experimental Control Room (ECR), and East Area Hold Point #1.
    - 5.3.3.1 Update the Hazardous Gas Location Book at the MCR.
    - 5.3.3.2 Update the Hazardous Gas Location Board at the ECR.
  - 5.3.4 File the check-off into the Hazardous Gas Book.

## 6. **Documentation**

6.1 CAS Watch Log  
C-A-OPM 8.12.3 (W)

- 6.2 CAS Watch Supervisor Report
- 6.3 Hazardous Gas System Operator Log
- 6.4 MCR Hazardous Gas Location Book
- 6.5 The completed (Parts A and B) CAS Maintenance and Safety Check-List for Apparatus Employing Hazardous Gas.

## **7. References**

- 7.1 [C-A-OPM 8.11.1, "Filling LH2 Targets".](#)
- 7.2 [C-A-OPM 8.12.1, "Crane Clearance Procedure".](#)
- 7.3 [C-A-OPM 8.12.3, "Introduction Of Hazardous Gas Into Experimental Area"](#)
- 7.3 CAS Procedures and Instruction Manual D.2.0, "Notifying the Operations Coordinator of Hazardous Gas Devices".
- 7.4 CAS Procedures and Instruction Manual D.4.0, "Requirements for the Use of the CAS Maintenance and Safety Check-List for Apparatus Employing Hazardous Gas".
- 7.5 CAS Procedures and Instruction Manual D.11.0, "Communicating Requests for Crane Operation During C-A Operating Period".
- 7.6 CAS Procedures and Instruction Manual D.16.0, "Hazardous Gas Book".

## **8. Attachments**

- 8.1 CAS Maintenance and Safety Check-List for Apparatus Employing Hazardous Gas (Form BNLF 1766A).
- 8.2 Reference Notes for Part B of Form BNLF 1766A.

# EAG MAINTENANCE AND SAFETY CHECK-OFF LIST FOR APPARATUS EMPLOYING HAZARDOUS GAS

## PART-B

### EAG OPERATIONAL CHECK-OFF FOR FILLING A HAZARDOUS GAS SYSTEM

HAZARDOUS GAS TYPE: _____		LOCATION / COLUMN: _____	
EXPERIMENTER: _____	NUMBER: _____	LIAISON: _____	
APPROVAL TO FILL DEVICE: DATE _____		TIME: _____	BY: _____ LIAISON
PERMISSION TO FILL: DATE _____		TIME: _____	BY: _____ Watch Supervisor
DEVICE PURGED: DATE _____		TIME: _____	BY: _____ Hazardous Gas Operator

## PART-C

### EAG OPERATIONAL CHECK-OFF FOR DUMPING A HAZARDOUS GAS SYSTEM

DUMP STARTED: DATE _____		TIME: _____	BY: _____ Watch Supervisor	
REASON: _____				
CONDITIONS TO BE SATISFIED BEFORE DUMP IS COMPLETED COMPLETE CHECKED ITEMS				
	Note	Items	Date	By
Device Purged and Cleared of Hazardous Gas	1			
Vent System Purged and Cleared of Hazardous Gas	2			
Bleed Off Any Pressure Lines	3			
Hazardous Gas or Liquid Removed	4			
Coordinator Notified (Area Cleared of Gas)	5			
DUMP COMPLETED: DATE _____		TIME: _____	BY: _____ Watch Supervisor	

## PART-D

### EAG OPERATIONAL CHECK-OFF FOR DUMPING A HAZARDOUS GAS SYSTEM

#### COMPLETE CHECKED ITEMS

	Note	Items	Date	By
Warning Signs Turned Off (No Smoking)	1			
Drip Leg Drain Valves Open	2			
All Monitoring Equipment is Locked Out	3			
ABOVE ITEMS COMPLETED: DATE _____		TIME: _____	BY: _____ BSG Supervisor	

BNLF 1766A

# **EAG MAINTENANCE AND SAFETY CHECK-OFF LIST FOR APPARATUS EMPLOYING HAZARDOUS GAS**

HAZARDOUS GAS TYPE: \_\_\_\_\_ LOCATION / COLUMN: \_\_\_\_\_

EXPERIMENTER: \_\_\_\_\_ NUMBER: \_\_\_\_\_ LIAISON: \_\_\_\_\_

## **PART-A**

### **MAINTENANCE CONDITIONS TO BE SATISFIED PRIOR TO OPERATION**

#### **COMPLETE CHECKED ITEMS**

	Note	Items	Date	By
Building Gas Detection System	1			
Local Gas Detection System	2			
Stack Fire Detection System	3			
Target Fire Monitor System	4			
Building Emergency Roof Fans	5			
Local Exhaust Fan	6			
Local Roof Fan Crash	7			
Local Evacuate System	8			
H. P. Vent System (Dump Lines)	9			
H. P. Vent System (Cylinder Rack)	10			
H. P. Vent System (Burster Disc.)	11			
H. P. Vent System (Drip Legs)	12			
H. P. Vent System (Chain Valve)	13			
Target Vacuum Alarm	14			
Target Trouble Alarm	15			
Experimenter's Power Interlock	16			
Warning Signs (No Smoking)	17			
Fire Extinguishers (2 minimum)	18			
Portable Gas Detector at EAG	19			
Exit Paths Cleared	20			
Safety Review Sticker Valid # _____	21			
All Extraneous Material Removed	22			
Hold Point Fully Operational	23			
Action Sheets Posted	24			
<b>ABOVE ITEMS COMPLETED : DATE _____ TIME _____ BY _____</b> <div align="right"><b>BSG Supervisor</b></div>				
<b>SPECIAL INSTRUCTION / COMMENTS :</b> _____ _____ _____ _____				

**NOTES:**

**CAS MAINTENANCE AND SAFETY CHECK-OFF LIST FOR  
APPARATUS EMPLOYING HAZARDOUS GAS**

**PART "B"**

NOTE: Before the Watch Supervisor can give permission to fill. It is his obligation to ensure that all precautions/instructions stated in references are fulfilled.

REFERENCES:

<a href="#">C-A-OPM 8.11.1,</a>	"Filling LH2 Targets".
<a href="#">C-A-OPM 8.12.1,</a>	"Crane Clearance Instructions".
<a href="#">C-A-OPM 8.12.3,</a>	"Introduction of Hazardous Gas Into Experimental Area".
CAS-P&I D.2.0,	"Notifying the Operations Coordinator of Hazardous Gas Devices".
CAS-P&I D.11.0,	"Communicating Requests for Crane Operation During C-A Operating Periods".
CAS-P&I D.16.0,	"Hazardous Gas Book".